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How We Meet Our Customers' Needs

United States Army

Redstone Technical Test Center (RTTC)







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What We Do

Dynamic

RTTC's Dynamic Test Branch provides testing services to simulate various dynamic environments experienced by tactical hardware during a life-cycle deployment including vibration, shock, acceleration, and acoustics. Capabilities exist to replicate transportation, handling, and operational functions of hazardous and non-hazardous materiel under extreme temperature conditions in both controlled laboratory conditions as well as field conditions. Facilities for laboratory dynamic testing are located at RTTC's Test Area 2 and Bldg. 4500, which include remote test bays for hazardous testing and a fully instrumented blockhouse. Test Area 7 and the Rail Impact Test Facility are utilized for field dynamic testing.



Road/mobility
testing of PAC3
launcher



Rail impact
testing of Patriot
generator



Data acquisition
on AH-60
helicopter

Overview

Primary Services
& Capabilities

Test Management
Services

Supplemental
Services

Primary Services and Capabilities

- Field Testing
 - Rail impact
 - Road/mobility
 - Instrumentation of subsystems and equipment on ground or airborne platforms
 - Data acquisition and signal analysis
- Laboratory Testing
 - Vibration
 - MDOF motion replication

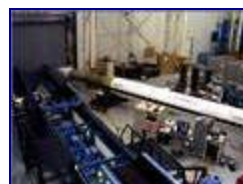
- Shock
- Acceleration
- Fuze/S&A functional testing (electrical or mechanical)
- Vibro-Acoustics
- Signal Analysis
- Experimental modal analysis
- Modeling and Simulation
 - Finite element analysis
 - Multi-body dynamics



6 DOF vibration
test of Hellfire
missile



Multi-body
dynamics--
analysis of roll-
over
characteristics of
a trailer



NMD booster
vehicle modal test

Supplementary Services

- Failure analysis
- Mobile instrumentation support vehicle for receiving and processing large volumes of transducer data via telemetry
- Vibration/shock specification development
- Direct technical support to customers

Specialized Facilities and Equipment

- System-level/subsystem/component-level hazardous and non-hazardous laboratory testing
- Four large test bays for conducting dynamic tests on hazardous and nonhazardous test items through control from a fully-instrumented blockhouse
- RTTC-controlled input road course
- testing
- Fixed telemetry ground station support to dynamic testing
- Vibro-acoustic test facility to perform simulated in-flight testing and more (acoustics, 6-DOF motion replication, or a combination of both)

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